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AUG 30 2006

Our ref: KON-1615C

Client's ref: P4518-001-0103

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of: T. SHIBUE et al : Art Unit: 1756
Serial No. : 10/808,498 :
Filed : March 24, 2004 : Examiner: J. A. McPherson
Title : OPTICAL FILM AND LIQUID :
CRYSTAL DISPLAY USING THE SAME :
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DECLARATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

S i r:

I, Hiroki Umeda, hereby declare and say as follows:

1. I am one of the inventors of the present invention.
2. I majored in chemistry and graduated from the Tokyo University of Science, Faculty of Science, in March of

1999. Since April of 1999, I have been employed by Konica Corporation and have engaged in the research and development of liquid crystal displays.

3. I am aware that the Examiner has rejected this application based on the combination of Matsuoka (US 6,630,973) and Shuto (US 5,856,468). Tests have been performed and are reported herein to demonstrate the criticality of the claimed Rt value of 60-300 nm in combination with the claimed DSac plus DSpr sum of 2.8 or less. These tests were performed by myself or under my direct supervision and control.
4. Cellulose acetate propionate was prepared in the same manner as Example 3 in col. 10 of Shuto. Example 3 of Shuto was chosen because the sum of DSac and DSpr is 2.77 which falls within the claimed range of 2.8 or less.
5. To 90 weight parts of the cellulose acetate propionate obtained in accordance with Example 3 of Shuto, 8 parts by weight of triphenyl phosphate and 2 parts of ethyl phthalyl ethyl glycolate were added. The triphenyl phosphate and the ethyl phthalyl ethyl glycolate were dissolved in a solvent mixture of methylene chloride (88 volume %) and

ethanol (12 volume %) to obtain a dope, wherein the solvent was used in an amount of 100 weight parts for 35 weight parts of the sum of the cellulose acetate propionate, the triphenyl phosphate, and the ethyl phthalyl ethyl glycolate. The temperature of the dope was adjusted to 40 °C, and the dope was defoamed and filtered. The dope was then cooled to 35°C, and cast onto a stainless steel endless belt. The dope amount of the casting dope and the line speed of the endless belt were adjusted so that the resulting films had a final thickness of 40-190 µm. Drying conditions were controlled by adjusting the temperature and the amount of the drying air so as to have a residual solvent amount of 10-45% during peeling. The peeled cellulose acetate propionate web was stretched in a direction perpendicular to the web conveying direction by a clip tenter while drying. The stretching conditions were adjusted so that the resulting films had the film thicknesses and the retardation values shown in Table 1 below. The stretching factor was 2-50%, the stretching tension was 50-400 N, the conveying tension within the drying zone was 50-200 N, the amount of the residual solvent was 5-100%, and the stretching temperature was 7-

180°C. Film samples 1 through 6 shown in Table 1 below were prepared in this manner.

6. Film samples 1 through 6 were evaluated to determine the retardation value R_t , the number of luminescent spots, and the viewing angle in the manner described in par. 3 on page 74 of the present application, in par. 1 on page 78 of the present application, and in par. 1 on page 80 of the present application. The evaluation results are shown in Table 1 below.

Table 1

Sample No.	DSac + DSpr	R_t	Film Thickness	Number of Luminescent Spots (per 25 mm ²)		Viewing Angle
				5-50 μ m	50 μ m or more	
1	2.77	50 nm	100 μ m	110	1	C
2	2.77	60 nm	100 μ m	86	0	A
3	2.77	150 nm	100 μ m	78	0	A
4	2.77	250 nm	120 μ m	89	0	A
5	2.77	300 nm	190 μ m	95	0	B
6	2.77	310 nm	190 μ m	121	2	C

7. As shown in Table 1, Samples 1 through 6 each had a DSac plus DSpr sum of 2.77 which falls within the claimed range.

However, Comparative sample 1 had an Rt value of 50 nm which falls below the claimed range, and Comparative sample 6 had an Rt value of 310 nm which falls above the claimed range. Comparative samples 1 and 6 were inferior to Inventive samples 2 through 5 in terms of the number of luminescent spots and the viewing angle.

8. I believe that the evaluation results shown in Table 1 above demonstrate the criticality of the claimed Rt value of 60-300 nm in combination with the claimed DSac plus DSpr sum of 2.8 or less. I also believe that the evaluation results are surprising and unexpected based on the teachings of Matsuoka and Shuto, because Matsuoka and Shuto do not teach or suggest the criticality of the combination of the claimed Rt range with the claimed sum of DSac plus DSpr.

It is declared by undersigned that all statements made herein of undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the U.S. Code; and that such willful false statements may

jeopardize the validity of this Application or any patent issuing thereon.

Hiroki Umeda
Hiroki Umeda

Dated: This 26th day of August, 2006.